

EXHIBIT E

Commonwealth of Pennsylvania
 Department of Mines and Mineral Industries

**MD Pollution Abatement Measures
 for the Beech Creek Watershed**

DESCRIPTION OF STRIP MINES

Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine (4)
				Direct (2)	Indirect (3)	
S- 1	Brookville	31.8	Sloped to Highwall	No Interconnections		1
S- 2	Brookville	3.3	Sloped to Highwall	X		2,4,5
S- 3	Clarion (Active)	5.1	None		X	4,5
S- 4	Middle and Upper Kittanning	5.4	Sloped to Highwall	X	X	6,7,8,9,11
S- 5	Middle and Upper Kittanning	7.0	None		X	9,11
S- 6	Lower Kittanning (Active)	31.8	Sloped to Highway	X	X	6,7,8,9,11
S- 7	Brookville	23.4	Sloped to Highwall	X		3,4,5,6,7,8
S- 8	Brookville	8.2	Sloped to Highwall	X		9,11
S- 9	Clarion	10.6	Pasture to Near Contour		X	10
S- 10	Lower Kittanning	3.2	None	X		Not Evident
S- 11	Lower Kittanning	10.2	None	X		13,14,15
S- 12	Lower Kittanning	34.0	Pasture to Near Contour	X		17
S- 13	Lower Kittanning	13.0	Contour	X		13
S- 14	Lower Kittanning	8.5	Sloped to Highwall		X	12
S- 15	Clarion	66.5	Pasture to Near Contour		X	11,12
S- 16	Clarion	73.2	Sloped to Highwall		X	11,12,18
S- 17	Lower Kittanning	22.2	Sloped to Highwall	No Interconnections		Not Evident
S- 18	Middle and Upper Kittanning	26.7	Sloped to Highwall	X	X	19
S- 19	Middle and Upper Kittanning	19.8	Sloped to Highwall		X	19
S- 20	Middle and Upper Kittanning	2.2	None	No Interconnections		Not Evident
S- 21	Lower Kittanning	8.7	Sloped to Highwall	X		20
S- 22	Lower Freeport	5.4	Sloped to Highwall	X	X	21,23
S- 23	Middle and Upper Kittanning	28.1	Sloped to Highwall		X	21,22,23
S- 24	Lower Kittanning	17.5	None	X		21,22,23
S- 25	Middle and Upper Kittanning	3.0	Contour		X	Not Evident
S- 26	Clarion	6.9	Sloped to Highwall	No Interconnections		Not Evident

Exhibit E (Continued)

Strip Mine (1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine (4)
				Direct (2)	Indirect (3)	
S- 27	Middle and Upper Kittanning	4.0	None	X		Not Evident
S- 28	Middle and Upper Kittanning	0.7	None	No Interconnections		Not Evident
S- 29	Lower Kittanning	5.9	None	No Interconnections		Not Evident
S- 30	Middle and Upper Kittanning	27.4	Sloped to Highwall	X		25,26,27,28, 29,30,31,32, 33,34,35
S- 31	Middle and Upper Kittanning	1.5	Sloped to Highwall	X		35
S- 32	Lower Freeport	19.4	Sloped to Highwall	X	X	25,26,27,28, 29,30,31,32, 33,34,35
S- 33	Middle and Upper Kittanning	3.6	Sloped to Highwall	X		35
S- 34	Lower Freeport	4.7	Sloped to Highwall	X	X	32,33,34,35
S- 35	Middle and Upper Kittanning	4.0	Sloped to Highwall	X		32,33,34,35
S- 36	Middle and Upper Kittanning	1.7	None	X		25,26,27,28, 29,30,31,32, 33,34
S- 37	Middle and Upper Kittanning	3.0	None	X		32,33,34,35
S- 38	Middle and Upper Kittanning	5.6	Pasture to Near Contour	X		32,33,34,35
S- 39	Brookville	18.3	Sloped to Highwall	No Interconnections		Not Evident
S- 40	Lower Kittanning	10.1	Sloped to Highwall	No Interconnections		46
S- 41	Clarion	44.4	Sloped to Highwall	No Interconnections		46
S- 42	Lower Kittanning	10.1	Sloped to Highwall	No Interconnections		46
S- 43	Middle and Upper Kittanning	15.1	Sloped to Highwall	X		39,41,42,43, 44
S- 44	Middle and Upper Kittanning	27.8	Sloped to Highwall	X		39,40,41,42, 43,44
S- 45	Lower Freeport	1.8	None	X	X	42,43,44
S- 46	Lower Kittanning	4.7	Sloped to Highwall	No Interconnections		46
S- 47	Middle and Upper Kittanning	10.2	Pasture to Near Contour	X		44,45,47
S- 48	Lower Freeport	1.5	Pasture to Near Contour		X	45,47
S- 49	Middle and Upper Kittanning	16.9	Sloped to Highwall	X	X	51,52,53
S- 50	Middle and Upper Kittanning	3.8	Sloped to Highwall	X	X	47,49,50,51
S- 51	Lower Kittanning	62.4	Sloped to Highwall	X	X	39,41,42,43, 44,45,47,49, 50
S- 52	Clarion	5.1	Sloped to Highwall	No Interconnections		48

Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine (4)
				Direct (2)	Indirect (3)	
S- 53	Lower Kittanning	54.4	Sloped to Highwall	X		37,38,48
S- 54	Lower Kittanning	3.1	Pasture to Near Contour	X		Not Evident
S- 55	Lower Kittanning	68.2	None	X		61,62
S- 56	Lower Kittanning	5.2	Pasture to Near Contour	No Interconnections		Not Evident
S- 57	Clarion	21.0	Sloped to Highwall		X	60
S- 58	Lower Kittanning	43.9	None	X		Not Evident
S- 59	Middle and Upper Kittanning	9.2	None	X	X	Not Evident
S- 60	Lower Kittanning	4.4	Sloped to Highwall	No Interconnections		Not Evident
S- 61	Lower Kittanning	3.3	Pasture to Near Contour	No Interconnections		Not Evident
S- 62	Clarion	102.3	Sloped to Highwall		X	16,54,55,56,57,58,59,60,64,65,66
S- 63	Brookville	19.0	Sloped to Highwall	No Interconnections		63
S- 64	Brookville	7.5	None	X		16,54,55,56,57,58,59,60,64,65,66
S- 65	Brookville	3.9	None	X		16,54,55,56,57,58,59,60,64,65,66
S- 66	Brookville	9.1	None	X		16,54,55,56,57,58,59,60,64,65,66
S- 67	Brookville	15.3	None	X		67
S- 68	Clarion	49.6	Sloped to Highwall		X	67,68,69,70
S- 69	Brookville	14.5	None	X		67,69,70
S- 70	Brookville	0.8	None	X		67
S- 71	Brookville	12.3	None	X		67
S- 72	Brookville	15.6	None	No Interconnections		Not Evident
S- 73	Brookville	37.4	Sloped to Highwall	No Interconnections		71,72
S- 74	Mercer	19.6	None	No Interconnections		Not Evident
S- 75	Brookville	6.2	None	X		73
S- 76	Brookville (Inactive Clay)	61.0	None	No Interconnections		74,75
S- 77	Mercer	6.0	Sloped to Highwall	No Interconnections		Not Evident
S- 78	Brookville (Inactive Clay)	17.0	None	No Interconnections		Not Evident
S- 79	Mercer	35.7	Sloped to Highwall	No Interconnections		76
S- 80	Mercer	1.1	None	No Interconnections		Not Evident

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Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine (4)
				Direct (2)	Indirect (3)	
S- 81	Brookville (Inactive Clay)	3.9	None		X	77
S- 82	Brookville (Active Clay)	2.0	None	X		Not Evident
S- 83	Brookville (Inactive Clay)	2.5	None		X	78,79,129
S- 84	Clarion	26.0	Sloped to Highwall	No Interconnections		Not Evident
S- 85	Mercer	2.8	Sloped to Highwall		X	129
S- 86	Clarion	3.9	None	X		80,129
S- 87	Brookville	25.0	Sloped to Highwall	X		81
S- 88	Brookville	4.4	None	No Interconnections		Not Evident
S- 89	Brookville	4.3	Sloped to Highwall	No Interconnections		Not Evident
S- 90	Brookville (Inactive Clay)	9.8	None	No Interconnections		Not Evident
S- 91	Clarion	5.1	Sloped to Highwall	No Interconnections		Not Evident
S- 92	Lower Kittanning	2.4	Sloped to Highwall	No Interconnections		Not Evident
S- 93	Clarion	11.7	None	No Interconnections		83
S- 94	Brookville	54.7	Sloped to Highwall	No Interconnections		83
S- 95	Clarion	12.6	Sloped to Highwall	No Interconnections		Not Evident
S- 96	Clarion	8.8	Sloped to Highwall	No Interconnections		Not Evident
S- 97	Lower Kittanning	12.1	Sloped to Highwall	No Interconnections		87,88
S- 98	Lower Kittanning	39.8	Sloped to Highwall	No Interconnections		Not Evident
S- 99	Clarion	3.1	None	No Interconnections		82
S-100	Clarion	10.5	Sloped to Highwall	No Interconnections		82
S-101	Clarion	4.2	None	X	X	84,85,87,88
S-102	Lower Kittanning	48.6	None	No Interconnections		Not Evident
S-103	Clarion	8.1	Sloped to Highwall	X		129
S-104	Brookville	14.0	Sloped to Highwall	X		85
S-105	Lower Kittanning	5.9	None			
S-106	Lower Kittanning	17.2	Sloped to Highwall	X		85
S-107	Lower Freeport	2.2	None	No Interconnections		87
S-108	Lower Kittanning	7.5	None	X		87,88
S-109	Clarion	8.4	Sloped to Highwall		X	91,92,93
S-110	Lower Kittanning	18.1	None	X		86,89,94
S-111	Middle and Upper Kittanning	109.3	Sloped to Highwall	X	X	86,87,88,89,94
S-112	Lower Kittanning	3.9	None	X		86
S-113	Lower Kittanning	23.0	None	X		86,95

Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine(4)
				Direct (2)	Indirect (3)	
S-114	Clarion	8.8	Sloped to Highwall	No Interconnections		Not Evident
S-115	Clarion	35.6	Sloped to Highwall	No Interconnections		96,97
S-116	Lower Kittanning	25.7	Sloped to Highwall	X		96,97
S-117	Clarion	17.1	Sloped to Highwall	X		98
S-118	Brookville	21.8	Sloped to Highwall	No Interconnections		Not Evident
S-119	Brookville (Active)	114.0	Sloped to Highwall	X		105,106
S-120	Clarion	194.2	Sloped to Highwall		X	110,111,112, 113
S-121	Brookville	57.8	None	X		109
S-122	Brookville	49.5	None	X		107,108
S-123	Brookville	3.7	None	X		108,109
S-124	Brookville	15.2	None	X		Not Evident
S-125	Brookville	4.4	Sloped to Highwall	No Interconnections		Not Evident
S-126	Brookville	25.7	None	X		111,112,114
S-127	Clarion	34.8	Sloped to Highwall	No Interconnections		116,117,118, 119
S-128	Brookville	75.8	Sloped to Highwall	No Interconnections		115,116,117, 118,119,120
S-129	Brookville	16.7	Sloped to Highwall	No Interconnections		120,121
S-130	Brookville	8.8	Sloped to Highwall	No Interconnections		122
S-131	Clarion	33.4	None	No Interconnections		123,124,125, 126,127
S-132	Lower Kittanning	16.0	None	No Interconnections		123,124,125, 126,127
S-133	Clarion	53.0	Pasture to Near Contour	No Interconnections		105
S-134	Clarion	14.3	Sloped to Highwall	No Interconnections		105
S-135	Lower Kittanning	4.1	None	X		Not Evident
S-136	Clarion	4.2	Sloped to Highwall	No Interconnections		Not Evident
S-137	Lower Kittanning	27.8	None	X		128
S-138	Middle and Upper Kittanning	12.3	None		X	128
S-139	Middle and Upper Kittanning	4.9	Contour		X	129
S-140	Lower Kittanning	8.7	None	X		129
S-141	Clarion	65.4	Sloped to Highwall		X	129
S-142	Brookville	15.3	None	X		129,130
S-143	Brookville	21.2	None	X		130

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Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine(4)
				Direct (2)	Indirect (3)	
S-144	Brookville	8.4	Sloped to Highwall		X	131
S-145	Clarion	39.8	Sloped to Highwall	No Interconnections		130
S-146	Brookville	21.7	Sloped to Highwall	No Interconnections		132
S-147	Mercer	5.8	Sloped to Highwall	No Interconnections		134
S-148	Brookville (Active Clay)	27.0	None	No Interconnections		133
S-149	Clarion (Active)	109.9	Sloped to Highwall	No Interconnections		135,136,137, 138,139,140, 141,142,143
S-150	Brookville	18.3	Sloped to Highwall	No Interconnections		137,138,139, 140,141
S-151	Brookville	15.0	Sloped to Highwall	X		145,146,147
S-152	Brookville	6.8	Sloped to Highwall	X		149,150
S-153	Clarion	84.8	None		X	144,145,146, 147,149,150, 151,152
S-154	Brookville	7.8	Sloped to Highwall	X		153
S-155	Brookville	7.3	Sloped to Highwall	X		154
S-156	Brookville	4.6	None	X		155
S-157	Brookville	25.0	Sloped to Highwall	X		154,155
S-158	Clarion	43.0	Sloped to Highwall		X	154,155
S-159	Clarion	2.3	Pasture to Near Contour	No Interconnections		Not Evident
S-160	Brookville	71.5	Sloped to Highwall	X		157,159,160, 161,162,163, 164
S-161	Clarion	151.9	Sloped to Highwall		X	157,158,159, 160,161,162, 163,164
S-162	Lower Kittanning	3.8	Pasture	No Interconnections		Not Evident
S-163	Brookville	4.8	None	No Interconnections		Not Evident
S-164	Brookville	25.8	None	No Interconnections		165
S-165	Brookville	26.8	Sloped to Highwall	No Interconnections		Not Evident
S-166	Clarion	65.6	Sloped to Highwall		X	166,167
S-167	Brookville (Active)	203.0	Sloped to Highwall	X		166,167,168, 169,172,173, 174
S-168	Clarion	141.0	Sloped to Highwall		X	168,169,172, 173,174

Strip Mine(1)	Coal Seam Mined	Affected Area (Acres)	Type of Backfill	Type of Interconnection With Deep Mine Workings		MD Discharge Points Providing Relief for Waters Entering Strip Mine(4)
				Direct (2)	Indirect (3)	
S-169	Clarion	8.2	Sloped to Highwall		X	175
S-170	Brookville	11.2	None	X		175
S-171	Brookville	27.9	None	X		Not Evident
S-172	Brookville	8.6	None	X		176
S-173	Clarion	25.0	None		X	176
S-174	Clarion	5.7	Sloped to Highwall	No Interconnections		Not Evident
S-175	Brookville	18.8	Sloped to Highwall	X		177
S-176	Brookville	0.6	None	X		Not Evident
S-177	Brookville	68.0	Sloped to Highwall	No Interconnections		Not Evident
S-178	Brookville	36.8	Sloped to Highwall	No Interconnections		Not Evident
S-179	Brookville	7.2	Sloped to Highwall	No Interconnections		Not Evident
S-180	Clarion	0.5	None	No Interconnections		Not Evident
S-181	Clarion	0.6	None	No Interconnections		Not Evident
S-182	Brookville	10.9	None	X		178
S-183	Brookville	6.5	Sloped to Highwall	No Interconnections		Not Evident
S-184	Brookville	435.6	Sloped to Highwall	No Interconnections		179,180,181, 182
S-185	Brookville	7.1	None	No Interconnections		Not Evident
S-186	Mercer (Inactive Clay)	6.0	None	X		Not Evident
S-187	Mercer (Inactive Clay)	1.5	None	X		Not Evident
S-188	Mercer (Inactive Clay)	1.5	None	X		Not Evident

- (1) Inactive coal mine unless otherwise noted; See Plates III-A and III-B for location of strip mines.
- (2) Direct interconnections between strip mines and deep mine workings exist where strip mines actually cut into deep mine workings allowing free drainage either into or out of the workings.
- (3) Indirect interconnections between strip mines and deep mine workings exist when water may seep vertically or laterally through fractured rock strata either into or out of the workings.
- (4) See Plates III-A and III-B for location of MD Discharge Points.